



EFW

PATENT  
Customer No. 22,852  
Attorney Docket No. 6720.0104-00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	)	
	)	
Chun Chian LU	)	Group Art Unit: 2631
	)	
Application No.: 10/639,144	)	Examiner: Unknown
	)	
Filed: August 11, 2003	)	
	)	
For: PERTURBATION AND	)	Confirmation No.: 7607
EQUALIZATION METHOD AND	)	
SYSTEM FOR MULTI-USER	)	
DETECTION	)	

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)**

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicant brings to the attention of the Examiner the documents listed on the attached PTO 1449. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application.

Copies of the listed documents are attached.

Applicant respectfully requests that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed

documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and Applicant determines that the cited documents do not constitute "prior art" under United States law, Applicant reserves the right to present to the U.S. Patent and Trademark Office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

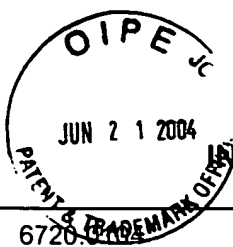
If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: June 21, 2004

By: William J. Burgin Reg# 43,515  
for Richard V. Burgujian  
Reg. No. 31,744



## INFORMATION DISCLOSURE CITATION

Atty. Docket No. 6720-0001	Appln. No. 10/639,144
Applicant Chun Chian LU	
Filing Date August 11, 2003	Group: 2631 Examiner: Unknown

## U.S. PATENT DOCUMENTS

Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
	5,719,899	2/1998	Thielecke et al.			
	5,790,606	8/1998	Dent			
	5,905,721	5/1999	Liu et al.			
	5,933,457	8/1999	Hottinen			
	5,940,742	8/1999	Dent			
	6,088,593	7/2000	Dent			
	6,148,041	11/2000	Dent			
	6,161,209	12/2000	Moher			
	6,396,457	5/2002	Gatherer et al.			

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

J. G. Proakis, "Digital Communications," Ch. 6, pp. 519-701, (2d ed., 1989)
S. Verdu, "Minimum probability of error for asynchronous Gaussian multiple-access channels," IEEE Trans. Information Theory, Vol. IT-32, no. 1, pp 85-96, January 1986.
M. Honig et al., "Blind adaptive multi-user detection," IEEE Trans. Information Theory, Vol. 41, no.4, pp 944-960, July 1995.
H. Liu et al., "A decorrelating RAKE receiver for CDMA communication over frequency-selective fading channels," IEEE Trans. On Communications, Vol. 47, No. 7, pp. 1036-1045, July 1999.
D. Divsalar et al., "Improved Parallel interference Cancellation for CDMA," IEEE Trans. Commun., vol. 46, no. 2, pp. 258-268, February 1998.
Q. Sun et al., "Effect of channel estimation error on a new pipelined multi-stage PIC detector for CDMA," Proceedings of IEEE 7 <sup>th</sup> Int. Symposium on Spread Spectrum Tech. and Appl., Prague, Czech Republic, pp. 628-632, September 2002.
A. Klein et al., "Zero forcing and minimum mean-square-error-equalization for multi-user detection in code-division multiple-access channels," IEEE Trans. on Vehicular Tech., vol. 45, no. 2, pp. 276-287, May 1996.
X. Wang et al., "Blind equalization and multiuser detection in dispersive CDMA channels," IEEE Trans. on Communications, vol. 46, no. 1, pp. 91-103, January 1998.
X. Wang et al., "Blind multiuser detection: a subspace approach," IEEE Trans. on Inform. Theory, vol. 44, no. 2, pp. 677-690, March 1998.
C. C. Lu, "Perturbation principle of multi-user detection," Computer and Communications Research Laboratory, ITRI, 2001.

# INFORMATION DISCLOSURE CITATION

Atty. Docket No.	6720.0104	Appln. No.	10/639,144
Applicant	Chun Chian LU		
Filing Date	August 11, 2003	Group:	2631 Examiner: Unknown

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	C. C. Lu, "Peturbation method of interference cancellation in multi-path CDMA systems," Proceedings of IEEE 7 <sup>th</sup> Symposium on Spread Spectrum Techniques and Applications, Prague, Czech Republic, pp. 278-282, September 2002.
	J. Mathews et al., "Mathematical Methods of Physics," Ch. 6 (pp. 134-161) and Ch. 10 (pp. 273-284), W. A. Benjamin, Inc., New York, 1965.
	C. C. Lu, "Interference Cancellation in Multi-Path CDMA Systems," Computer and Communication Research Laboratory, ITRI, IEEE, pps 1083-1086, 2002.
	C. C. Lu, "Interference Cancellation in Multi-Cell CDMA Systems," Computer and Communication Research Laboratory, ITRI, IEEE, 5 pages, 2002.

Examiner	Date Considered
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	
Form PTO 1449	Patent and Trademark Office - U.S. Department of Commerce